

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 051667WO/HI/rs	<b>FOR FURTHER ACTION</b> See Form PCT/PEA/416	
International application No. PCT/US2004/028827	International filing date (day/month/year) 07.09.2004	Priority date (day/month/year) 10.10.2003
International Patent Classification (IPC) or national classification and IPC H01R13/629, H01R13/621		
Applicant 3M INNOVATIVE PROPERTIES COMPANY		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 4 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  06.08.2005	Date of completion of this report  23.02.2006	
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Salojärvi, K  Telephone No. +31 70 340-4036	



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**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/US2004/028827

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-23 received on 14.12.2005 with letter of 12.12.2005

**Drawings, Sheets**

1/2, 2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/US2004/028827

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-23
Inventive step (IS)	Yes: Claims	
	No: Claims	1-23
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1 Reference is made to the following document:

D1: US-A-5 219 301 (FRANTZ ROBERT H) 15 June 1993 (1993-06-15)

2 INDEPENDENT CLAIMS 1 AND 17

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 and 17 is not new in the sense of Article 33(2) PCT.

2.1 Claim 1

The document D1 discloses (the references in parentheses applying to this document):

A connector shell for a connector component of a connector arrangement (2) for a wire cable (C) comprising:

- a housing (8, 10, 12, 14) including first contact elements (27);
- the housing being provided with at least one first guiding element (18) having an axis for guiding the housing along a second guiding element (210) of a mating connector component (204) of the connector arrangement (2) upon coupling with the mating connector component allowing alignment of the first contact elements with mating second contact elements of the mating connector component prior to their mechanical contact with each other (col. 9 lines 19-39), and
- at least one fastening element (16) associated to the at least one first guiding element (18) and substantially aligned with the axis of the at least one first guiding element for engagement with the second guiding element (210) of the mating connector component.

2.2 Claim 17

The document D1 also discloses (the references in parentheses applying to this document):

A mating connector component for connecting to the connector shell, comprising at least one second guiding element (210) along which the at least one first guiding element (18) of the housing of the connector shell (8, 10, 12, 14) is guidable, the second guiding element comprising a receiving portion (211) for receiving a portion of the fastener element (16) of the connecting shell (8, 10, 12, 14).

- 2.3 The document D1 thus discloses all the features of the independent claims 1 and 17, and the requirements of Article 33(2) PCT regarding novelty are not fulfilled.

**3 DEPENDENT CLAIMS 2-16 AND 18-23**

Dependent claims 2-16 AND 18-23 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, see document D1.

**4 INDUSTRIAL APPLICABILITY**

The invention relates to a connector shell for a connector and to a mating connector component. Consequently, it is obvious that the invention has industrial applicability.

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**CLAIMS**

1. A connector shell for a connector component of a connector arrangement for a wire cable comprising:
  - a housing (16) including first contact elements (18),
  - the housing (16) being provided with at least one first guiding element (24) having an axis for guiding the housing (16) along a second guiding element (48) of a mating connector component (14, 50) of the connector arrangement upon coupling with the mating connector component allowing alignment of the first contact elements (18) with mating second contact elements of the mating connector component (14, 50) prior to their mechanical contact with each other, and
  - at least one fastening element (34) associated to the at least one first guiding element (24) and substantially aligned with the axis of the at least one first guiding element (24) for engagement with the second guiding element (48) of the mating connector component (14, 50).
2. The connector shell according to claim 1, wherein the fastening element (34) is secured to at least one of the housing (16) and the at least one first guiding element (24) of the housing (16).
3. Connector shell according to claims 1 or 2, wherein the fastening element (34) extends through a passageway (46) formed in a portion of the at least one first guiding element (24) of the housing (16) for engagement with the second guiding element (48) of the mating connector component (14, 50).
4. Connector shell according claim 3, wherein the passageway (46) is axially aligned with the at least one first guiding element (24).
5. Connector shell according to any one of claims 1 to 4, wherein the fastener element (34) is a screw.

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6. Connector shell according to claim 5, wherein the screw comprises an operating end (42) for manually screwing the screw to the second guiding element (48) of the mating connector component (14, 50).
7. Connector shell according to any one of claims 1 to 6, wherein the fastening element (34) comprises a shaft (36) extending through a passageway (46) formed in a portion of the at least one first guiding element (24) of the housing (16), the shaft (36) comprising a head (42) and a thickened portion (40) both located outside of and adjacent to opposite ends of the passageway (46).
8. Connector shell according to claim 7, wherein the fastening element (34) is axially movable within the passageway (46) by a distance defined by the abutment of each of the head (42) and the thickened portion (40) of the fastening element (34) to the respective opposite ends of the passageway (46).
9. Connector shell according to any one of claims 1 to 8, wherein the at least one first guiding element (24) comprising a receiving channel (28) for receiving the second guiding element (48) of the mating connector component (14, 50).
10. Connector shell according to claim 9 and any one of claims 3 to 8, wherein the receiving channel (28) comprises a receiving opening (30) and an end (32) arranged opposite thereto and through which the passageway (46) for the fastening element (34) extends.
11. Connector shell according to any one of claims 1 to 10, wherein the housing (16) comprises two first guiding elements (24) at opposite sides of the housing (16) and wherein to each first guiding element (24) a fastening element (34) is associated.

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12. Connector shell according to any one of claims 1 to 11, wherein the second guiding element (48) of the mating connector component (14, 50) comprises a receiving portion (54) for receiving a portion of the fastening element (34) associated to the at least one first guiding element (24) for fastening the housing (16) to the second guiding element (48) of the mating connector component (14, 50).
13. Connector shell according to claims 12, wherein the receiving portion comprises a receiving bore.
14. Connector shell according to claim 13, wherein the receiving bore comprises a thread (56).
15. Connector shell according to claim 12, wherein the receiving portion comprises a receiving pin.
16. A connector shell according to claim 15, wherein the receiving pin comprises a thread (56).
17. A mating connector component for connecting to the connector shell (12) of any one of the preceding claims, comprising at least one second guiding element (48) along which the at least one first guiding element (24) of the housing (16) of the connector shell (12) is guidable, the second guiding element (48) comprising a receiving portion (54) for receiving a portion of the fastener element (34) of the connecting shell (12).
18. The connector component according to claim 17, wherein the receiving portion (54) comprises a receiving bore.



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19. The connector component according to claim 18, wherein the receiving bore comprises a thread (56).
20. The connector component according to claim 17, wherein the receiving portion comprises a receiving pin.
21. The connector component according to claim 20, wherein the receiving pin comprises a thread (56).
22. The connector component according to any one of claims 17 to 21, further comprising a housing and/or a face plate (14), in particular a backplane to which the at least one second guiding element (48) is attached or attachable.
23. The connector component according to any one of claims 1 to 22, further comprising at least one electrical contact element to be electrically connected to a contact element (18) of the connector shell (12).